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AVERAGE AND PROBABILITY.

61. Proposed by COL. CLARKE.

A cube being cut at random by a plane, what is the chance that the section is a hexagon? [From *Williamson's Integral Calculus.*]

62. Proposed by O. S. KIBLER, Superintendent of Schools, Middleburg, O.

A bag contains any number of balls, which are equally likely to be white or black; one is drawn and found to be white. Show that the chance of drawing another white one, the first ball not being replaced, is two-thirds. [From *C. Smith's Treatise on Algebra*, page 615.]

⁂ Solutions of these problems should be sent to B. F. Finkel, not later than April 10.

MISCELLANEOUS.

60. Proposed by S. HART WRIGHT, M. D., A. M., Ph. D., Penn Yan, N. Y.

When the Sun's declination is 23° 27′ 15′′ North$=\delta$, in what latitude will it shine on the *north* side of buildings during the first half of the forenoon, and on the *south* side during the other half, and what will be the length of the day?

61. Proposed by COOPER D. SCHMITT, A. M., Professor of Mathematics, University of Tennessee, Knoxville, Tenn.

The product of n numbers, each the sum of four squares, may be expressed as the sum of four squares in $(48)^{n-1}$ different ways.

⁂ Solutions of these problems should be sent to J. M. Colaw, not later than April 10.

NOTES.

THE EVANSTON MEETING OF THE AMERICAN MATHEMATICAL SOCIETY.

The second meeting of the Chicago Section of the American Mathematical Society was held at Evanston, Ill., on December 30th and 31st, 1897. The first session was called to order in the morning of December 30th by the chairman of the section, Head Professor Moore, University of Chicago. The following list of papers was announced:

1. Independent computation of integrals involving the square root of a quadric or cubic expression. Professor Henry Benner, Albion College.
2. Upon a ruled surface of the fourth order mechanically generated. Dr. E. M. Blake, Purdue University.
3. Upon articulated systems. Dr. E. M. Blake, Purdue University.
4. On the cubic involution and the theory of elliptic functions. Professor Oskar Bolza, University of Chicago.
5. Approximate solution of a particular differential equation. Dr. James H. Boyd, University of Chicago.
6. A note on reticulations. Professor Ellery W. Davis, University of Nebraska.

7. On systems of curves depending upon a single parameter. Dr. L. W. Dowling, University of Wisconsin.
8. A generalized Legendre's coefficient. Dr. James W. Glover, University of Michigan.
9. On a geometrical papyrus of the first century. Mr. Edgar J. Goodspeed, University of Chicago.
10. Alternate processes. Professor Arthur S. Hathaway, Rose Polytechnic Institute.
11. On a remarkable class of hyperspherical tetrahedra. Professor C. H. Hinton, University of Minnesota.
12. Multiple totients. Mr. D. N. Lehmer, University of Nebraska.
13. The determination of all ternary and quaternary symmetrical and alternating collineation-groups. Professor H. Maschke, University of Chicago.
14. On the solvability of groups. Dr. G. A. Miller, Cornell University.
15. Concerning the general equations of the seventh and eighth degrees. Professor E. H. Moore, University of Chicago.
16. Continuous Groups of Spherical Transformations. Professor H. B. Newson, University of Kansas.
17. Normal forms of projective transformations. Professor H. B. Newson, University of Kansas.
18. Cantor's transfinite numbers. Professor James Byrnie Shaw, Illinois College.
19. A new kind of number. Professor James Byrnie Shaw, Illinois College.
20. Twisted quartic curves of the first species and certain associated quartics. Professor Henry S. White, Northwestern University.

Professor Moore stated that a paper from Dr. Dickson, California University, reached him too late to be placed in the list. On account of the richness of the list of papers it was necessary to request the authors to be as brief as possible in presenting them. Regardless of these efforts to save time, the sessions had to be very long in order to get through with the work in two days.

As a whole the papers were of a high grade and furnished another index that we are moving rapidly towards higher types of mathematical activity. It is to be hoped that this forward movement will keep pace with the improvements in our library facilities. Through the generosity of some of our largest libraries it is becoming possible to keep in fairly close touch with the progress in our science, even if one is removed from the library centers.

One of the most pleasant features of the meeting was the fact that nearly all the authors of the papers were present and could thus present their own papers. It was also encouraging to see a number of mathematicians from a distance who were not represented on the program. Among these we may mention Professor Ziwet, editor of the "Bulletin" of the society; Professor Markley, Michigan University; Professor Skinner, Wisconsis University; Professor Waldo, DePaw University; Mr. A. C. Burnham, Illinois University; Professor Winston, Kansas Agricultural College, etc.

In our country of great distances such meetings seem especially important, not only on account of the inspiration resulting from the close contact with those of similar pursuits, but also on account of the opportunities to correct erroneous impressions in regard to the relative importance of the various lines of investigations. It is to be hoped that the future meetings of the Chicago Section will exert a still stronger influence on Western mathematics in both of these lines.

G. A. MILLER.

Ithaca, N. Y., January 5, 1898.

EDITORIALS.

Dr. Lovett's article on Lie's Transformation Groups came too late for publication in this issue.

Through the courtesy of T. J. McCormack, assistant editor of the Open Court, we were enabled to present in the January number, a portrait of Leonhard Euler. A portait and biography of Euler appeared in the November number of the Open Court.

We note with pleasure that our valued contributor Dr. G. A. Miller has been appointed instructor in mathematics at Cornell University. His work began the first of this year. The *Cornell Era* of Feb. 5th expresses high appreciation of the fact that Cornell has been fortunate enough to secure so valuable an addition to its Faculty of mathematical instructors. Dr. Miller is a young mathematician of great promise. In the summer of 1895 he went to Germany and spent one year almost entirely in working with Professor Lie, the following year he spent at Paris working with Professor Jordan. That Dr. Miller has done some very fine work in the subject of groups, is sufficiently attested by the fact that both Jordan and Picard have presented his communications to the Paris Academy of Science.

BOOKS AND PERIODICALS.

College Algebra. By Edward A. Bowser, LL. D., Professor of Mathematics and Engineering in Rutgers College, New Brunswick, N. J. 558 pages. Boston: D. C. Heath & Co.

This work has become so far established in favor that it needs no special commendation from us. In matters, arrangement, and manner of treatment this book has numerous good features. It has just been adopted as the text to be used in the new Cosmopolitan University correspondence course. J. M. C.

(1) *Elements of Calculus.* By James M. Taylor, A. M., Professor of Mathematics, Colgate University. 249 pages. Boston: Ginn & Company.

(2) *Elements of Determinants.* By Paul H. Hanus, Assistant Professor of